

CLAIMS

I claim:

1. A process for conversion of oxidizers to concentrated nitric acid or dilute nitric acid in any specified concentration without the removal of any or all common inhibitors, said process comprising completing the process steps of a-e as follows:
 - a. providing a separate storage tank for an oxidizer selected from inhibited red fuming nitric acid (IRFNA-N₂O₄) containing inhibitors and nitrogen tetroxide (N₂O₄), said storage tanks designated as T1 and T2 respectively, said inhibitors comprising HF, H₃PO₄, and I₂;
 - b. passing said IRFNA-N₂O₄ from said tank T1 through a filter F2 to separate waste to waste tank W1;
 - c. passing filtrate from said filter F2 through piping means wherein H₃PO₄ is adjusted via a tank T5 to approximately 5-6 times the HF content in the HNO₃ with inhibitors;
 - d. transferring said HNO₃ with inhibitors and added H₃PO₄ to reactor R1 for distillation and further processing; and,
 - e. distilling N₂O₄ from said reactor R1 to a tank T3.
2. A process for conversion of oxidizers to concentrated nitric acid or dilute nitric acid in any specified concentration with the removal of any or all common inhibitors, said process comprising completing the process steps of a-g as follows:
 - a. providing a separate storage tank for an oxidizer selected from inhibited red fuming nitric acid (IRFNA-N₂O₄) containing inhibitors and nitrogen tetroxide (N₂O₄), said storage tanks designated as T1 and T2 respectively, said inhibitors comprising HF, H₃PO₄, and I₂;
 - b. passing said IRFNA-N₂O₄ from said tank T1 through a filter F2 to separate waste to waste tank W1;
 - c. passing filtrate from said F2 through piping means wherein H₃PO₄ is adjusted via a tank T5 to approximately 5-6 times the HF content in concentrated HNO₃ with inhibitors; which is transferred to reactor R1 for distillation;
 - d. distilling N₂O₄ from said filtrate to a tank T3;

- e. transferring said filtrate remaining to a reactor tank R2;
 - f. distilling HNO_3 from said reactor tank R2 to a tank T4 for containing HNO_3 98% + for further processing; and ,
 - g. transferring the waste from said reactor tank R2 to waste with inhibitors tank W2.
3. The process for conversion of oxidizers to concentrated nitric acid or dilute nitric acid in any specified concentration without the removal of any or all common inhibitors as defined in claim 1 wherein said HNO_3 with inhibitors and added H_3PO_4 is transferred to a HNO_3 storage P1.
4. The process for conversion of oxidizers to concentrated nitric acid or dilute nitric acid in any specified concentration without the removal of any or all common inhibitors as defined in claim 1 wherein said HNO_3 with inhibitors and added H_3PO_4 is transferred to a mixer tank M1 reactor wherein said HNO_3 with inhibitors and added H_3PO_4 is diluted with H_2O prior to being transferred to a HNO_3 storage P1.
5. The process for conversion of oxidizers to concentrated nitric acid or dilute nitric acid in any specified concentration with the removal of any or all common inhibitors as defined in claim 2 wherein said HNO_3 98% + is transferred to a HNO_3 98% tank P2.
6. The process for conversion of oxidizers to concentrated nitric acid or dilute nitric acid in any specified concentration with the removal of any or all common inhibitors as defined in claim 2 wherein said HNO_3 98% + is transferred to a mixer tank M2 wherein said HNO_3 98% is diluted with H_2O prior to being transferred to a HNO_3 dilute tank P3.
7. The process for conversion of oxidizers to concentrated nitric acid or dilute nitric acid in any specified concentration with the removal of any or all common inhibitors as defined in claim 2 wherein said N_2O_4 is transferred from said tank T3 to a N_2O_4 reactor R3 and wherein said HNO_3 98%+ is transferred from said tank T4 to said N_2O_4 reactor R3 for further reacting under pressure of from 1 to 5 atmospheres with $\text{H}_2\text{O}/\text{H}_2\text{O}_2$ and air/ O_2 to yield HNO_3 98%+.
8. The process for conversion of oxidizers to concentrated nitric acid or dilute nitric acid in any specified concentration with the removal of any or all common inhibitors as defined in claim 7 wherein said HNO_3 98%+ is transferred to HNO_3 98%+ tank P2.

9. The process for conversion of oxidizers to concentrated nitric acid or dilute nitric acid in any specified concentration with the removal of any or all common inhibitors as defined in claim 7 wherein said HNO_3 98%+ is transferred to HNO_3 98%+ is transferred to a mixer tank M3 wherein said HNO_3 98% is diluted with H_2O prior to being transferred to a HNO_3 dilute tank P3.

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